

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested in view of the above amendments and the following remarks.

Claims 1-9 are pending in this application. By this amendment, Claims 1 and 8 have been amended. Support for the amendments to Claims 1 and 8 is found, by way of non-limiting example, in application FIGs. 1-3, and the corresponding specification description, including page 8, lines 21-25. Accordingly, it is respectfully submitted that no new matter has been added.

In the outstanding Office Action, Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Background Art (specification page 1, line 14 to page 4, line 10, hereinafter “BA”) In view of Yoshikawa et al. (Phase Optimization of Kinoform by Simulated Annealing, Applied Optics, Vol. 33, No. 5; February 10, 1994, hereinafter “Yoshikawa”) and further in view of Payne et al. (US 2004/0021768 A1, hereinafter “Payne”).

Applicants hereby express appreciation for the grant of a personal interview on May 28, 2010. During that interview proposed amendments to Claims 1 and 8 were discussed in an effort to overcome the rejection of record. During the interview, the Examiner acknowledged that the proposed amendment to Claim 1, which would be made in Claim 8 as well, would overcome the rejection of Claims 1-9 issued on March 29, 2010. However, the Examiner asserted that there may be other references that could be uncovered during a search which could be used to reject the sole amended claims. He therefore stated that if the proposed amendments were filed after Final, they would not be entered on the ground that they raised new issues requiring further consideration and/or search. Therefore, he suggested that the proposed amendments be filed along with a request for continued examination (RCE) to receive full consideration of the amendatory language.

An Interview Summary form was issued by the Examiner on June 7, 2010. It is respectfully submitted that that Interview Summary form contains errors with regard to the interview. Firstly, the interview was conducted on May 28, 2010 not May 29 as stated on the Interview Summary form. May 29 is a Saturday and, clearly, was not the date of the interview. Secondly, in the note attached to the Interview Summary form the Examiner states:

The Examiner communicated to Mr. Gellner that said limitation would be insufficient to overcome the prior art, since that was one of the features of the prior art as understood by the Examiner, and further in view of what the Examiner has previously found in the art.

This statement is not entirely accurate. Rather, the Examiner asserted during the interview that other references, not yet identified, could, in his view, be used to reject the claims as amended.

With regard to the assertion in the Interview Summary form that:

Mr. Gellner further inquired whether the Examiner could suggest any amendments that would overcome the prior art. The Examiner suggested that the Applicants had limitations to how the calculations are made, since, in the Examiner's opinion, the Applicants seems to claim the results of its invention rather than the specific way in which they are obtained,

the amendments to Claims 1 and 8 as embodied herein, recite how the calculations are made in the language of Claims 1 and 8 to be quoted as follows. Furthermore, for reasons to be argued to follow, these amendments are neither disclosed by, nor rendered obvious by, the cited references.

Claims 1 and 8 recite, in part:

the constraints are information regarding an optical wavefront control unit and a condition restricting a region to be calculated so as to calculate, on a control image basis, of a three-dimensional image corresponding to the control image recorded in the optical wavefront control unit, the region to be calculated

being a region of the three-dimensional image affected by change of a pixel on the optical wavefront control unit.

It is respectfully submitted that these features are neither disclosed by, nor rendered obvious by, BA, Yoshikawa, Payne, or the combination thereof.

The Office Action correctly recognizes that “AAPA and Yoshikawa do not explicitly teach the predetermine condition as also a condition restricting a region to be calculated of a three-dimensional image of each pixel of a control image recording in the obstacle wavefront control unit.”

The Office Action subsequently asserts “Payne however teaches the three-dimensional display in which calculations are minimized by taking into account only the range of angles that cause an effect (see abstract; see par. [0033]; see par. [0093] for using this limitation and calculation by determining the originating units and the control device that affect a region and further speeding calculations by limiting the range of angles that each holographic element is required to direct light into).”

Payne describes a reconfigurable-three-dimensional display wherein knowledge of the viewer’s eyes is used to enable the effective exit pupils of the display system to be optimized. Payne utilizes this knowledge to identify contributing regions within the display that contribute light to the viewer.¹ Thus Payne states that the invention is directed to “minimizing the computation time required to generate a Computer Generated Hologram (CGH).”² Payne refers to prior proposals for incorporating movable exit pupils within the system³ including head tracking⁴ and eye-position tracking⁵. Payne, however, is directed to positioning of effective exit pupils which requires no moving parts in the system.⁶

¹ Abstract.

² Paragraph [0001].

³ Paragraph [0006].

⁴ Paragraph [0007].

⁵ Paragraph [0009].

⁶ Paragraph [0018].

Payne states “[p]riority is given to calculating and displaying the part of the display corresponding to the contributing region.” Payne states “the control means determines the range of angles that sub-regions of the display means must direct light into to contribute to the image formed for the at least one viewing position and the pixel values of the display means are calculated such that priority is given to directing light into said range of angles.”⁷ Finally, Payne states “the bandwidth (range of spatial frequencies) of the fringes and coded into each hogel (holographic element) would be determined by the limited range of angles that each hogel is required to direct light into for a given viewer position.”⁸ Thus, Payne is directed to adjusting an angular range of a contributing region of an image based upon monitoring of the eye of the observer.

Payne does not describe calculation of three-dimensional images corresponding to a group of control images based on constraints which are information regarding an optical wavefront control unit and a condition restricting a reason to be calculated so as to calculate, on a control image basis, a three-dimensional image corresponding to the control image recording recorded in the optical wavefront unit, the region to be calculated being a region of the three-dimensional image affected by change of a pixel on the optical wavefront control unit as recited in Claims 1 and 8.

The background art and Yoshikawa fail to correct the deficiencies of Payne described above, because neither of these cited references describes the features of Claims 1 and 8 quoted above.

It is respectfully submitted that dependent Claims 2-7 and 9 are patentable at least for the reasons argued above with regard to Claim 1 from which they depend.

⁷ Paragraph [0033].

⁸ Paragraph [0093].

Accordingly, it is respectfully requested that the rejections of Claims 1-9 be reconsidered and withdrawn, and that Claims 1-9 be passed to allowance.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below-listed telephone number.

Respectfully submitted,

OBLOON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Michael L. Gellner
Registration No. 27,256

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/09)

4016408_1.DOC